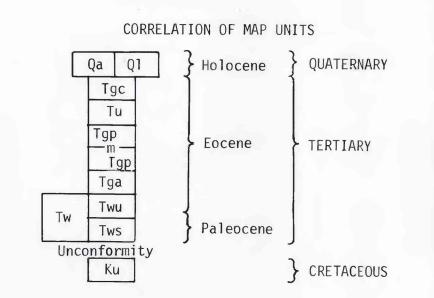


PRELIMINARY GEOLOGIC MAP OF THE WEST HALF OF THE THIRTEENMILE CREEK QUADRANGLE, RIO BLANCO AND GARFIELD COUNTIES, COLORADO

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DESCRIPTION OF UNITS

ALLUVIUM (HOLOCENE) -- Unconsolidated locally derived deposits of valley fill. At places veneered by thin gravel deposits LANDSLIDE DEPOSITS (HOLOCENE) --Unconsolidated surficial masses of broken rock along Deer and Davis Gulches in southwestern part of quadrangle. Composed mainly of blocks of marlstone derived from the Parachute Creek Member of Green River Formation (Tgp) UINTA FORMATION (EOCENE) -- Light-brown to light-gray tuffaceous and argillaceous sandstone and siltstone and minor beds of gray and green mudstone and shale and light-gray marlstone. Grain size of the sandstone ranges from very fine to coarse. Some sandstone and siltstone beds are resistant and form prominent cliffs; others are friable and weather to slopes. Sandstone beds contain quartz and varying amounts of rock fragments, clay, biotite, and heavy minerals. The preserved thickness of the Uinta in the quadrangle is about

GREEN RIVER FORMATION (EOCENE) Coughs Creek Tongue--Light-gray, locally fossiliferous marlstone containing some beds of brown sandstone and siltstone. Marlstone is very hard and breaks variously to papery, chippy, or blocky pieces. Fresh surfaces are light gray and medium brown with medium- to darkbrown laminations. The tongue caps two hills in the southwestern part of the quadrangle and is about 25 m thick Parachute Creek Member--Massive to platy

75 m. The exposed surface of formation

is present day erosion surface

marlstone and beds of dark-brown, gray, and bluish-gray oil shale, all weathering light gray. Contains numerous very thin yellowish-brown tuff beds and a few beds of siltstone and sandstone. Along Davis Gulch in the southwestern part of the quadrangle, the

Control

Top of the Mahogany ledge at the surface and top of the Mahogany zone in the subsurface--A rich oil shale zone in the. Parachute Creek Member. Along Davis Gulch in the southwestern part of the quadrangle the ledge is about 35 m thick Anvil Points Member -- Mostly light gray, light tan, and dark brown fine- to coarse-grained, locally conglomeratic, sandstone and interbedded gray and tan siltstone and shale; minor light-tan and

yellowish-gray ostracodal limestone.

Thickness is about 565 m

WASATCH FORMATION (EOCENE AND PALEOCENE) Undivided--Shown only on cross section Upper part--Gray and tan fine- to coarsegrained sandstone and gray, greenishgray, reddish-brown, and red shale and silty shale. Thickness about 1070 m. Fossil pollen are present at locality D5233 in SE1/4 sec. 28, T. 3 S., R. 94 W., about 2 m above top of basal sandstone of Wasatch Formation. The pollen was examined by J. P. Bradbury who reported (written commun., 1977): "The sample contains a diverse assemblage of pollen types. Preservation is fair. The most abundant types are: Quercus explanata?,

Tricolporopollenites confossus, Nyssapollenites type, Momipites cf. M. coryloides, Ulmipollenites, Cupressaceae, verrucate and scabrate monolete spores, Thomsonipollis, Maceopolipollenites tenuipolus. Erdtmanipollis?. This pollen flora suggests an early to middle Paleocene age for the sample. In general it is similar to the pollen flora described by K. R. Newman (1965) from the top of his Meeker outcrop section" Basal sandstone--Thin persistent zone of conglomerate and coarse-grained sandstone. The conglomerate is composed

mostly of pebbles and cobbles of red and black chert and quartzite as much as 10 to 14 cm across. The cobbles and pebbles are in a matrix of poorly consolidated coarse-grained white sandstone. Thickness about 25 m UNDIVIDED CRETACEOUS ROCKS

——— CONTACT--Varies from well exposed to locally obscured or concealed by soil or vegetation

-8000 - STRUCTURE CONTOURS--Drawn on top of Mahogany

zone or ledge. Dashed where approximately located. Contour interval 100 feet (30.5 m)

X D5233 FOSSIL POLLEN LOCALITY

NOTE

The Thirteenmile Creek quadrangle was mapped as part of a program designed primarily to show the areal distribution and structure of the Eocene Green River Formation and associated Tertiary formations. Consequently only the western part of the quadrangle was mapped and studied. Lithologic descriptions of the various Tertiary units are only summarized here. More complete discussions of the bedrock geology are in reports by Cole and Picard (1975, 1978), Donnell (1961), Juhan (1965), Ritzma (1965), and Snow (1970). The lithology of cores used in the correlation diagram is described in a report by Smith and O'Sullivan (1982). Along the Grand Hogback, Tertiary rocks are immediately underlain by the Upper Cretaceous Mesaverde Group. The group is as much as 1830 m thick and consists of thick beds of sandstone. shale, siltstone, and coal, all largely of terrestrial origin. The Mesaverde Group is described in a report by Collins (1976).

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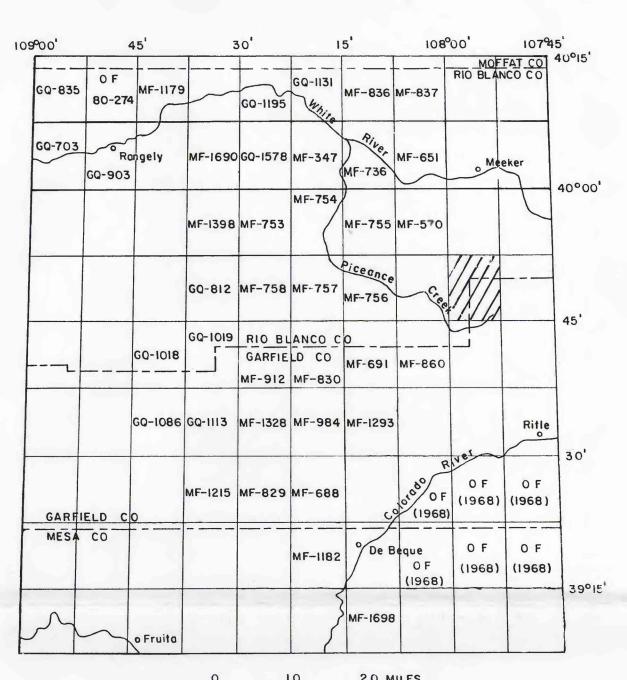
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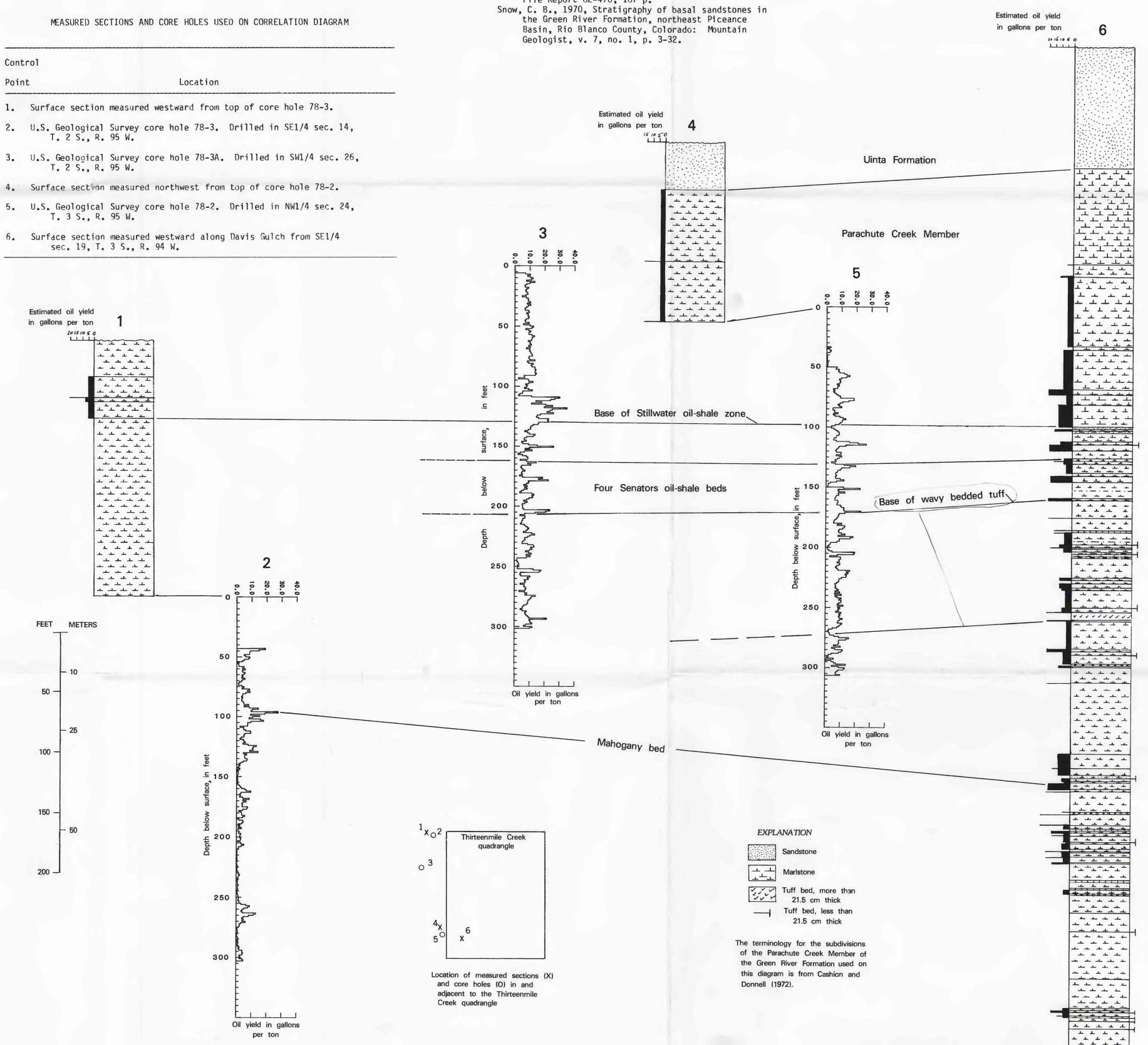
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INDEX MAP SHOWING LOCATION OF THIS QUADRANGLE (PATTERNED) AND OTHER PUBLISHED U.S. GEOLOGICAL SURVEY 72-MINUTE GEOLOGIC MAPS IN THE PICEANCE CREEK BASIN AREA, NORTHWESTERN COLORADO. PUBLISHED MAPS INCLUDE GEOLOGIC QUADRANGLE MAPS (GQ), MISCELLANEOUS FIELD STUDIES MAPS (MF), AND OPEN-FILE REPORTS (OF).



CORRELATION DIAGRAM